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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,394	12/18/2001	Zhenya Alexander Yourlo	169.2257	2197
5514	7590	12/29/2005	EXAMINER SENI, BEHROOZ M	
FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			ART UNIT 2613	PAPER NUMBER

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/020,394	YOURLO, ZHENYA ALEXANDER	
	Examiner	Art Unit	
	Behrooz Senfi	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-80 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29,31-35,43-56,58-62 and 70-80 is/are rejected.
- 7) ☐ Claim(s) 30,36-42,57 and 63-69 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments have been fully considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 – 3, 5, 8, 9, 16, 28, 33, 43, 55, 60 and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sitrick (US 2005/0151743).

Regarding claims 1, Sitrick '743 teaches, encoding a sequence of images for Transmission (i.e. fig. 11), rendering a first image from an object based computer graphics application (figs. 5 and 6, 525 is the rendered image, and figs. 11 – 12, the output 1101 is the rendered image, page 4, paragraph 0040), encoding the first image according to predetermined encoding scheme (FIG. 11, MPEG encoder, page 7, paragraph 0065), rendering a second image from the object based computer graphics application (figs. 1 - 10), identifying changes between the first image and the second image from a change indicating output of the computer graphics application (page 7, paragraph 0065), repeating steps for each subsequent image (reads on processing of each new next image in the sequence, page 7, paragraph 0065).

Sitrick '743 reference is silence in regards to, determine a manner in which the entire second image is encoded according to the predetermined encoding scheme after identifying the changes.

However, Sitrick '743 as discussed earlier, identifies the changes between the encoded image stored in the memory and the next image prior to encoding (page 7, paragraph 0065) and if there is a change, the portion in the next image that has been changed would be further processed (page 12, paragraph 0114).

In view of the above teaching, Sitrick '743 further process the portion of the next (second) image that has been changed, instead of whole entire second image as claimed, which reduces the data storage and encoding process.

Regarding claim 2, Sitrick '743 teaches, pixel-based representation of each image and for the second and subsequent images upon at least the change indicating output, (digital image is made of pixels, page 7, paragraphs 0064, 0065 and 0066).

Regarding claim 3, Sitrick '743 teaches, wherein the change indicating output comprises information indicating an extent of change in the pixel-based representation in the buffer thereby enabling the encoding according to the predetermined encoding scheme of substantially only those pixels that have changed (digital image is made of pixels, page 7, paragraphs 0064, 0065 and 0066).

Regarding claim 5, Sitrick '743 teaches, encoding scheme comprises MPEG (fig. 11, 1180) and transmission over network (page 14, paragraph 0127).

Regarding claim 8, Sitrick '743 teaches, an encoder for encoding a series of images into a bit-stream, each image being rendered from a graphics object application

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in which the encoder is constrained to operate according to a plurality of inputs describing the image, wherein the format of the input is known by the encoder (fig. 11, 1115, 1105).

Regarding claim 9, Sitrick '743 teaches, wherein one of the input comprises a first change input representing those portions of a pixel map of a current image that have changed relative to an immediately preceding image (page 11, paragraph 0140, pixel map).

Regarding claim 16, the limitations claimed are substantially similar to claim 1, therefore the grounds for rejecting claim 1 also applies here. Furthermore, encoding the sequence using the encoder such that the encoder utilizes at least one of the changes to optimize encoding of the current image, reads on the fact that the encoder only encodes the portion that has been (page 12, paragraph 0114, lines 24 – 29).

Regarding claim 28, Sitrick '743 teaches, storing an encoded representation of at least the current image (fig. 11, storage 1140).

Regarding claim 33, Sitrick '743 teaches, wherein if the image is identical to the preceding image, the encoding comprises encoding a special image indicator representative of no change in the sequence, (page 12, paragraph 0114, lines 26 – 29, where teaches presentation that are unchanged/identical from frame to frame need not be further process, indicates that there should be an indicator, that indicates the frame is unchanged).

Regarding claim 43, the limitations as claimed are substantially similar to claim 1, and are computer implemented program and instruction of claim 1, to carry on the

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process of forming a sequence of images for transmission. Since the process of forming a sequence of images for transmission as taught by Sitrick are computer implemented, therefore the ground for rejecting claim 1 also applies here.

Regarding claim 55, the limitations claimed have been analyzed and rejected with respect to claim 28.

Regarding claim 60, the limitations claimed have been analyzed and rejected with respect to claim 33.

Regarding claim 70, the limitations claimed are substantially similar to claim 1 and are apparatus of the method of claim 1, therefore the grounds for rejecting claim 1 also applies here.

4. Claims 4, 10, 17, 44 and 71 - 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sitrick (US 2005/0151743) in view of Politis (US 5,745,121).

Regarding claim 4, Sitrick '743 teaches, rendering image from an object based computer graphics application, as discussed with respect to claim 1.

Sitrick '743 reference is silence in regards to, hierarchical representation of each image for rendering the image.

However such features are well known and used in prior art of record as evidenced by Politis '121 (i.e. fig. 35, col. 9, lines 9 – 15) wherein teaches expression tree, representing the image.

Taking the combined teaching of Sitrick and Politis as a whole, it would have been obvious to one skilled in the art at the time of the invention was made to modify the image tracking and substitution of Sitrick, by representing the image region in a

hierarchical fashion (expression tree) as taught by Politis, which an image is separated into elements so that they can be independently rendered.

Regarding claims 10 and 17, the limitations claimed have been analyzed and rejected with respect to claim 4.

Regarding claim 44, the limitations claimed have been analyzed and rejected with respect to claim 4.

Regarding claim 71, the limitations claimed have been analyzed and rejected with respect to claim 4.

Regarding claim 72, combination of Sitrick and Politis teaches, wherein the hierarchical representations each comprise a compositing tree of graphical objects and graphical operation (fig. 35, cols. 3 – 4, lines 50 – 8 of Politis).

5. Claims 18 – 24, 27, 29, 31, 32, 34, 35, 45 – 51, 54, 56, 58, 59, 61, 62, and 73 - 79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sitrick (US 2005/0151743) in view of Gu (US 6,075,875).

Regarding claim 18, Sitrick '743 teaches, encoding a sequence of images and rendering image from an object based computer graphics and identifying changes between the first image and the second image, as discussed with respect to claim 1, and also the information may include position, a rotational orientation and color information (page 8, paragraph 0082).

Sitrick '743 reference is silence in regards to, wherein the at least one of the changes is other than a pixel map representation of the image.

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However such features are well known and used in the prior art of the record as evidenced by Gu '875 (col. 10, lines 34 – 41) teaches affine transformation.

Taking the combined teaching of Sitrick and Gu as a whole, it would have been obvious to one skilled in the art at the time of the invention was made to use and apply affine transformation as taught by Gu, in image tracking process of Sitrick, to more particularly describe translation, rotation and magnification between the images.

Regarding claim 19, combination of Sitrick and Gu teaches, transformation matrix, (col. 10, lines 34 – 41).

Regarding claim 20, combination of Sitrick and Gu teaches, image content (page 2, paragraphs 0031 and 0033).

Regarding claim 21, combination of Sitrick and Gu teaches, color information, (page 8, paragraph 0082, page 10, paragraph 0091 of Sitrick) and run length encoder/entropy encoder (Gu, fig. 3a, 114).

Regarding claim 22, combination of Sitrick and Gu teaches, pixel map (page 11, paragraph 0140, pixel map of Sitrick and col. 10, lines 40 – 44 of Gu).

Regarding claim 23, combination of Sitrick and Gu teaches, background or foreground (col. 12, lines 27 – 57).

Regarding claim 24, combination of Sitrick and Gu teaches, position and area of a region of the current image that has been changed (col. 2, lines 10 – 59 of Gu and page 12, paragraphs, 0112 and 0114 of Sitrick).

Regarding claim 27, combination of Sitrick and Gu teaches, run length data (fig. 3a, 114 of Gu).

Regarding claim 29, Sitrick '743 teaches, encoding a sequence of images and rendering image from an object based computer graphics and identifying changes between the first image and the second image, as discussed with respect to claim 1.

Sitrick '743 reference is silence in regards to, encoded representation comprises a plurality of separately encoded discrete portions.

However such features are well known and used in the prior art of the record as evidenced by Gu '875 (col. 12, lines 27 - 32).

Taking the combined teaching of Sitrick and Gu as a whole, it would have been obvious to one skilled in the art at the time of the invention was made to modify the encoding process of Sitrick by encoding each objects separately as taught by Gu, to provide plurality of separated encoded objects.

Regarding claims 31 and 58, combination of Sitrick and Gu teaches, storage for storing an encoded image, as discussed earlier with respect to claim 28. Combination of Sitrick and Gu reference is silence in regards to, using a flag identifiable by the indicated change for retrieval of the encoded image from the storage. However, such features are notoriously well known in the prior art of the record, like scene change detection by using a flag to mark/indicate the changes, and therefore it would make the limitation using the flag for indicating the changes, which can be used for retrieval of the image obvious to one skilled in the art. Official Notice is taken.

Regarding claim 32, combination of Sitrick and Gu teaches, storing plurality of separately encoded portion and comparison (fig. 26, col. 12, lines 30 – 32).

Regarding claim 34, combination of Sitrick and Gu teaches, raster scan (fig. 7a, 212 of Gu).

Regarding claim 35, combination of Sitrick and Gu teaches, MPEG representation of each image (col. 7, lines 37 – 39, and col. 8, lines 64 – 66 of Gu, and fig. 11, 1180 of Sitrick).

Regarding claims 45 - 51, the limitations claimed have been analyzed and rejected with respect to claims 18 - 24.

Regarding claim 54, the limitations claimed have been analyzed and rejected with respect to claim 27.

Regarding claim 56, the limitations claimed have been analyzed and rejected with respect to claim 29.

Regarding claim 59, the limitations claimed have been analyzed and rejected with respect to claim 32.

Regarding claims 61 - 62, the limitations claimed have been analyzed and rejected with respect to claims 34 - 35.

Regarding claims 73 - 79, the limitations claimed have been analyzed and rejected with respect to claims 18 - 24.

6. Claims 26, 53 and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sitrick (US 2005/0151743) and Gu (US 6,075,875) further in view of Silverbrook et al (US 6,636,216).

Regarding claim 26, combination of Sitrick and Gu teaches, content comprises at least one of plane fill data and/or run-length encoded data used to form the current

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image and the information indicates that the content forms a region of flat color in the current image, as discussed earlier with respect to claim 21.

Combination of Sitrick and Gu is silence in regards to, when content comprises a plane fill, the encoding comprises, encoding of a single pixel value representing the current image.

However, such features are well known and used in the prior art of the record as evidenced by Silverbrook '216 (i.e. fig. 33, col. 47, lines 45 – 48, col. 100, lines 35 – 39).

Taking the combined teaching of Sitrick and Gu and Silverbrook as a whole, it would have been obvious to one skilled in the art at the time of the invention was made to use the teaching of Silverbrook to modify the encoding process of Sitrick and Gu, to represent the entire image by a single pixel (col. 47, lines 40 – 47) as taught by Silverbrook.

Regarding claim 53, the limitations claimed have been analyzed and rejected with respect to claim 26.

7. Claims 25, 52 and 80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sitrick (US 2005/0151743) and Gu (US 6,075,875) further in view of Politis (US 5,745,121).

Regarding claim 25, combination of Sitrick and Gu teaches, rendering image from an object based computer graphics application and identifying changes between the first image and the second image, as discussed with respect to claim 1.

Combination of Sitrick and Gu reference is silence in regards to, change comprises information regarding changes to the compositing tree.

However such features are well known and used in prior art of record as evidenced by Politis '121 (i.e. fig. 18).

Taking the combined teaching of Sitrick and Gu and Politis as a whole, it would have been obvious to one skilled in the art at the time of the invention was made to modify the image tracking of Sitrick and Gu, by representing the image region in a hierarchical fashion (expression tree) as taught by Politis, to determine the changes in the hierarchical tree.

Regarding claims 52 and 80, the limitations claimed have been analyzed and rejected with respect to claim 25.

Allowable Subject Matter

8. Claims 30, 36 – 42, 57 and 63 – 69 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure 5,537,528, 5,274,718, 6,003,033, 4,935,730, 6,483,519 and "a Hierarchical Representation for image based rendering" by Chun Fa Chang.

Contact

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Behrooz Senfi** whose telephone number is **(571) 272-7339**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Mehrdad Dastouri** can be reached on **(571) 272-7418**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

(571) 273-8300

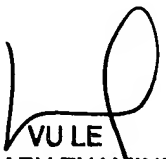
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Hand-delivered responses should be brought to Randolph Building, 401 Dulany Street, Alexandria, Va. 22314.

Any inquiry of a general nature or relative to the status of the application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is **(571) 272-6000**.

B. M. S.

12/19/2005


VU LE
PRIMARY EXAMINER